



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/583,196

06/14/2006

Kurt Brunner

63572A

7713

109 7590 06/05/2008

The Dow Chemical Company
Intellectual Property Section
P.O. Box 1967
Midland, MI 48641-1967

EXAMINER

VO, HAI

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

06/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,196	Applicant(s) BRUNNER ET AL.	
	Examiner Hai Vo	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 21-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. Objection of the claims have been overcome in view of the present amendment.
2. The 102/103 art rejections over JP 2001-226509 have been withdrawn in view of the present amendment.
3. The 102/103 art rejections over Wu et al (US 2002/0035164) have been withdrawn in light of the present amendment.
4. The art rejections over Lin (US 6,364,988) in view of JP 2001-226509 are maintained.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
6. Claims 1-11, and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-226509 in view of Lin (US 6,364,988). JP'509 teaches a multilayer sheet comprising a polypropylene foamed layer and at least one polypropylene resin layer on a surface of the foamed sheet (abstract). The foamed layer has a thickness from 1 to 3 mm. The foam layer has a surface weight of 175 to 425 g/m². The multilayer sheet has a surface weight of at most 500 g/m². The polypropylene resin layer is about 10 to 250 microns thick (paragraph 45). Likewise, the thickness of the multilayer sheet overlaps with the claimed range. The polypropylene resin layer includes a copolymer of propylene and 1-butene (paragraph 35). The multilayer

sheet comprises a ridge (paragraph 50). JP'509 teaches the polypropylene resin layer containing up to 5% by weight of filler (paragraphs 43 and 44). There is no teaching or suggestion in the JP'509 patent that using the filler with an amount of greater than 5% by weight would materially alter the property of the product.

Likewise, it is clearly apparent that there is no particular restriction on the amount of the filler in view of the teachings of the Japanese patent. JP'509 does not specifically teach the polypropylene resin layer containing 10% to 40% by weight of filler. Lin, however, teaches a multilayer sheet comprising a polypropylene foamed layer and at least one polypropylene resin layer on a surface of the foamed sheet (abstract). The polypropylene resin layer contains up to 40% by weight of filler (claim 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the filler in the polypropylene resin layer in an amount as taught by Lin motivated by the desire to enhance mechanical strength of the product.

JP'509 as modified by Lin does not specifically disclose $S \geq 2 \times 10^{-7} G^{3.1872}$ and $S = (S_m S_c)^{0.5}$, wherein G is the surface weight of the multilayer sheet expressed in g/m²; S is the geometric bending moment, S_m the maximum bending moment in the plane of the multilayer sheet and S_c the bending moment in the direction perpendicular to the plane direction of the multilayer sheet. However, it appears that the modified multilayer sheet meets all the structural limitations and chemistry as required by the claims; therefore, it is the examiner's position that such relationships would be inherently present as like material has like property. It seems from the

claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. The same token is applied to the average bending force and maximum sheet curl.

7. Claims 1, 2, 5-9, 21-23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al (US 2002/0035164) in view of Lin (US 6,364,988). Wu teaches a multilayer sheet comprising a polypropylene foamed layer and at least one polypropylene resin layer on a surface of the foamed sheet (paragraph 57). Polypropylene can be a substantially linear polypropylene homopolymer or a copolymer of propylene and a minor amount up to 30 wt% of an alpha-olefin (paragraph 20). The multilayer sheet has a thickness from 0.5 to 2 mm (paragraph 56). As the polypropylene resin layer is much thinner than the foam layer, the thickness of the multilayer sheet is approximately the same as the thickness of the foam layer. Wu teaches the multilayer sheet having a density from 0.4 to 0.8g/cm³ and a thickness ranging from 0.5 to 2 mm (paragraph 53). The grammage of the multilayer sheet would be at least 200 g/m² based on the calculation set forth in the amendment filed 03/03/2008. This is within the claimed range. Wu does not specifically teach the polypropylene resin layer containing 10% to 40% by weight of filler. Lin, however, teaches a multilayer sheet comprising a polypropylene foamed layer and at least one polypropylene resin layer on a surface of the foamed sheet (abstract). The polypropylene resin layer contains up to 40% by weight of filler

Art Unit: 1794

(claim 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the filler in the polypropylene resin layer in an amount as taught by Lin motivated by the desire to enhance mechanical strength of the product.

Wu as modified by Lin does not specifically disclose $S \geq 2 \times 10^{-7} G^{3.1872}$ and $S = (S_m S_c)^{0.5}$, wherein G is the surface weight of the multilayer sheet expressed in g/m²; S is the geometric bending moment, S_m the maximum bending moment in the plane of the multilayer sheet and S_c the bending moment in the direction perpendicular to the plane direction of the multilayer sheet. However, it appears that the resulting multilayer sheet meets all the structural limitations and chemistry as required by the claims; therefore, it is the examiner's position that such relationships would be inherently present as like material has like property. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. The same token is applied to the average bending force and maximum sheet curl.

8. Claims 3, 4, 10 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al (US 2002/0035164) in view of Lin (US 6,364,988) as applied to claim 1 above, further in view of JP 2001-226509. Wu does not teach the multilayer sheet comprising a crease. JP'509 teaches the packaging material including a ridge (paragraph 50). Therefore, it would have been obvious to one having ordinary skill

Art Unit: 1794

in the art at the time the invention was made to form the packaging material of Lin with a crease such is known in the packaging material art and JP'509 provides necessary details to practice the invention of Wu.

9. Claims 1-11 and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (US 6,364,988) in view of JP 2001-226509. Lin teaches a multilayer sheet comprising a polypropylene foamed layer and at least one polypropylene resin layer on a surface of the foamed sheet (abstract). The multilayer sheet has a thickness of 250 microns (column 6, lines 50 et seq.). The foam layer has a thickness about 8 times the thickness of the non-foamed layer. The polypropylene resin layer contains up to 40% by weight of filler (claim 1). As the thickness is directly proportional to the surface weight, it is not seen that the surface weight could be outside the claimed range as the thickness is within the claimed range. Lin does not teach the resin layer comprising a polymer including units derives from a 1-alkene monomer. JP'509 teaches a multilayer sheet comprising a polypropylene foamed layer and at least one polypropylene resin layer on a surface of the foamed sheet (abstract). The polypropylene resin layer includes a copolymer of propylene and 1-butene (paragraph 35). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the resin layer comprising an 1-alkene monomer because a polypropylene homopolymer and propylene copolymer with an alpha-olefin monomer have been shown in the art to be recognized equivalent polymers for the resin layer forming the packaging material.

Lin does not teach the packaging material comprising a crease. JP'509 teaches the packaging material including a ridge (paragraph 50). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the packaging material of Lin with a crease such is known in the packaging material art and JP'509 provides necessary details to practice the invention of Lin.

Lin discloses "there has been a long felt need for a synthetic paper which may be manufactured in larger width over 6 meters and smaller thickness below 60 microns and excellent physical properties in printability, pen writing, packaging..." Likewise, the paper with a thickness less than 60 microns can be produced with the specific device disclosed by the Lin patent. The passage further implies that the conventional paper with a thickness of greater than 250 microns could be obtained according to the invention as well. Lin does not disclose the paper having a thickness ranging from 300 to 1500 microns. JP'509 teaches a multilayer sheet comprising a polypropylene foamed layer and at least one polypropylene resin layer on a surface of the foamed sheet (abstract). The foamed layer has a thickness from 1 to 3 mm. The foam layer has a surface weight of 175 to 425 g/m². The multilayer sheet has a surface weight of at most 500 g/m². The polypropylene resin layer is about 10 to 250 microns thick (paragraph 45). Likewise, the thickness of the multilayer sheet overlaps with the claimed range. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the packaging material of Lin with a thickness in the range instantly claimed

because such is a typical thickness of the conventional paper and JP'509 provides necessary details to practice the invention of Lin.

Lin as modified by JP'509 does not specifically disclose $S \geq 2 \times 10^{-7} G^{3.1872}$ and $S = (S_m S_c)^{0.5}$, wherein G is the surface weight of the multilayer sheet expressed in g/m²; S is the geometric bending moment, S_m the maximum bending moment in the plane of the multilayer sheet and S_c the bending moment in the direction perpendicular to the plane direction of the multilayer sheet. However, it appears that the resulting multilayer sheet meets all the structural limitations and chemistry as required by the claims; therefore, it is the examiner's position that such relationships would be inherently present as like material has like property. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. The same token is applied to the average bending force and maximum sheet curl.

Response to Arguments

10. The art rejections over JP'509 taken alone have been withdrawn for the favor of the 103 rejections over JP'509 in view of Lin. Applicants contend that JP'509 teaches away from a foamed resin sheet containing more than 5% by weight of filler. The examiner respectfully disagrees. There is no teaching or suggestion in the JP'509 patent that using the filler with an amount of greater than 5% by weight would materially alter the property of the product. Likewise, it is clearly apparent that there

is no particular restriction on the amount of the filler in view of the teachings of the Japanese patent. Lin is strong evidence to show that the synthetic paper containing up to 40% by weight of filler. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the filler in the polypropylene resin layer in an amount as taught by Lin motivated by the desire to enhance mechanical strength of the product.

11. The art rejections over Wu taken alone have been withdrawn for the favor of the 103 rejections over Wu in view of Lin. Applicants contend that Wu does not teach the grammage within the claimed range. That is not true. The examples 7-12 are presented for purposes of illustration only, and are not intended to limit the scope of the reference. The examiner directs Applicants' attention to paragraph 53. Wu teaches the multilayer sheet having a density from 0.4 to 0.8g/cm³ and a thickness ranging from 0.5 to 2 mm. The grammage of the multilayer sheet would be at least 200 g/m² based on the calculation set forth in the amendment filed 03/03/2008. This is within the claimed range.

12. The art rejections over Lin in view of JP'509 have been maintained for the following reasons. It is true that Lin does not teach the thickness and grammage set forth in the claims. However, Lin discloses "there has been a long felt need for a synthetic paper which may be manufactured in larger width over 6 meters and smaller thickness below 60 microns and excellent physical properties in printability, pen writing, packaging..." Likewise, the paper with a thickness less than 60 microns can be produced with the specific device disclosed by the Lin patent. The passage

further implies that the conventional paper with a thickness of greater than 250 microns could be obtained according to the invention as well. Lin does not disclose the paper having a thickness ranging from 300 to 1500 microns. JP'509 teaches a multilayer sheet comprising a polypropylene foamed layer and at least one polypropylene resin layer on a surface of the foamed sheet (abstract). The foamed layer has a thickness from 1 to 3 mm. The foam layer has a surface weight of 175 to 425 g/m². The multilayer sheet has a surface weight of at most 500 g/m². The polypropylene resin layer is about 10 to 250 microns thick (paragraph 45). Likewise, the thickness of the multilayer sheet overlaps with the claimed range. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the packaging material of Lin with a thickness in the range instantly claimed because such is a typical thickness of the conventional paper and JP'509 provides necessary details to practice the invention of Lin. Accordingly, the art rejections are sustained.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory

action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on Monday through Thursday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hai Vo/
Primary Examiner, Art Unit 1794